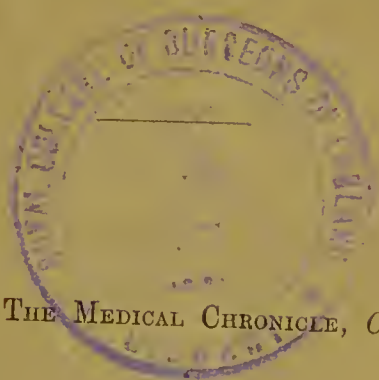


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ON THE TREATMENT OF DUPUYTREN'S  
CONTRACTION OF THE FINGERS.

BY  
JAMES HARDIE, F.R.C.S.



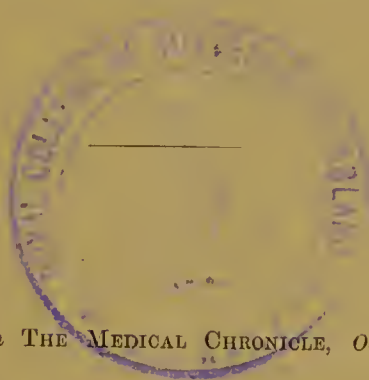
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## ON THE TREATMENT OF DUPUYTREN'S CONTRACTION OF THE FINGERS.

BY JAMES HARDIE, F.R.C.S.

By many surgeons the treatment of Dupuytren's contraction of the fingers is looked upon as highly unsatisfactory, and there is a pretty widespread feeling in the profession generally that it is an affection well nigh incurable. Till recently, I myself have not been sanguine of being able to accomplish much in its treatment, but having, during the present year, operated on several cases according to the method of Goyrand, I am satisfied that the defective results which have so generally been obtained have been due, not so much to any peculiarity in the affection itself, as to erroneous methods of operating. We have, I believe, been led off the track by two causes; firstly, by the operation introduced by Dupuytren himself, with whose name the affection is so generally associated; and secondly, by the introduction of subcutaneous surgery. Dupuytren operated\* by making transverse incisions through skin and fascia at the most resistant points, a method, undoubtedly, by which the fingers may at once be brought down to a perfectly straight position, if only the incisions be sufficiently numerous and extensive. This result, however, can only be accomplished by the creation of lozenge-shaped gaps in the skin, of a size corresponding to the length of the incisions; and as these gaps have to close subsequently by the process of granulation, the ultimate result of such a method must necessarily be a return of the deformity, more or less pronounced, when the natural shrinkage of the granulation tissue has been completed. Possibly, as has been attempted by some, this untoward event might be mitigated by the insertion of sutures, with a view to converting the transverse into a longitudinal wound. But, on account of the peculiar condition of the skin, to be presently alluded to, this is almost impossible; and the attempt is only an expedient to remedy the defects of an operation, as applicable to this condition, erroneous in its very conception. Professor Busch, of Bonn, has recently introduced† a modified method of performing Dupuytren's operation, by making V-shaped incisions, in order to diminish the size of the

\* *Leçons orales*, Tome I.

† V. Dr. O. Madelung in the *Berliner Klinische Wochenschrift*, 1875, No. 15.

open wound ; but inasmuch as, here again, healing takes place by granulation, the operation contains the element of failure—modified failure, perhaps, as compared with that of the original method.

Subcutaneous division of the contracted bands of fascia would, at first sight, appear to be a very promising method of treating this affection, and by its means some surgeons, as Mr. W. Adams,\* have undoubtedly obtained highly gratifying results. This much I am quite prepared to admit. Yet, for all that, I cannot regard the subcutaneous operation as adapted to the treatment of this affection. I cannot regard the tenotome as the means to the end we have in view, nor expect that, by practice and dexterity in its use, we may generally achieve a successful result. The conditions met with in a case of Dupuytren's finger contraction are not so simple as in those cases in which tenotomy is usually so serviceable, as, for example, in talipes, whether congenital or acquired. If it were simply a case of contraction of the longitudinal processes of the palmar fascia, it would present no difficulty, but would be a typical case for the tenotome. Besides this, however, it is a circumstance of vast importance that the whole of the fibrous tissue attached to the principal plane of fascia is involved in the morbid condition. More especially is it the case that the minute processes which connect the skin with the fascia are involved, and that these two structures are thus abnormally bound together. The intimate manner in which the skin is normally attached to the palmar fascia is described in all anatomical works, and the pathological exaggeration of this, as met with in the affection under consideration, has been fully recognised by all writers on the subject. The importance of this pathological condition of the skin as an obstacle to treatment by subcutaneous operation has, however, been strangely overlooked by those who advocate this method. This union between skin and fascia is often so intimate that the two structures seem to be almost fused together in certain places. This occurs chiefly at the transverse cutaneous folds, and I have observed in some cases that at these points there had taken place perfectly evident absorption of the skin, together with its underlying cellular tissue and fat—an effect apparently produced by the unyielding pressure of the cord-like process of fascia with which they had become incorporated. In such a case one may be surprised to find how immediately the point of the knife enters this cord when, perhaps, one only intended to expose it. Between its transverse folds the skin generally appears hardened, thickened, and puckered, an effect due to the contraction of the areolar network. The total result of this is abolished or diminished mobility of the skin on the fascia.

\* "On Contraction of the Fingers," London, 1870.



Now, in order to succeed in straightening out the contracted fingers mere division of the fascial cords cannot, with this condition of the skin, be sufficient. A certain advantage will no doubt be obtained, but the puckered and unyielding skin will immediately be put on the stretch, and unless means be taken to unfold this, such advantage will be very slight and very transitory. It might be supposed that, by passing the tenotome horizontally between the skin and fascia, this might be accomplished. But, knowing pretty well how much may be accomplished by subcutaneous operation, I am persuaded that it would be perfectly futile, for most people at least, to expect in this manner to effect such a thorough separation of the two structures, in even a very moderately pronounced case, as will permit of the fingers being fairly well brought down. In slight cases it may be possible, and if this method be reserved for these, good and well.

I hold, therefore, that good results in the treatment of this deformity by either of the above methods cannot reasonably be hoped for, and that in moderately severe cases a little amelioration is the utmost that can be gained.

The method of Goyrand, published in 1834,\* three years after Dupuytren's case, seems much better to fulfil the indications of a well-devised operation. Those indications are, accessibility to the contracted tissues, and healing of the wound with a minimum amount of inflammatory exudation. Perhaps in the days of Goyrand the latter indication was not well fulfilled; but now, as I hope to show, with recent improvements in dressing, there is no difficulty in obtaining complete primary union of the wound. This operation consists, broadly, in making a longitudinal incision over the tense digital prolongations of the fascia, separating the skin from them, and cutting across the isolated cords. The lips of the incision are then brought together, and the fingers fixed in the extended position. In February last a case (Case I.) came under my care in which the attachment of the skin to the fascia was so very intimate and extensive that I was forced to adopt some method of treatment with a special view to its liberation. I unwittingly followed in the footsteps of Goyrand, and was so well satisfied with the result that I have performed the same operation in three other cases since—six hands in all. The only difference between my own practice and that of Goyrand, so far as I understand, is that I believe I attach more importance to the complete liberation of the skin than he appears to have done. Before narrating these cases, I shall describe the operation which the outcome of my experience leads me to recommend.

\* *Memoires de l'Académie Royale de Médecine*, Tome III.

An Esmarch's tourniquet having been applied, an incision is begun half an inch above the principal transverse fold of the palm, immediately over the tense bridle of fascia proceeding to the finger mainly involved. This is carried along the bridle to a little beyond the base of the last phalanx which is affected. The lips of the incision having been opened up, the knife is then carried close to the bridle along its whole extent, so as to separate from it the adjacent skin, cellular tissue, and fat, first on one side, and then on the other. In doing this it is necessary to go some depth near the upper end of the incision, so as to divide the little bands which attach the web of the finger to the processes of fascia inserted into the sides of the first phalanx. This dissection having been completed, the tense bridle and fascia, now almost isolated, is cut across at the upper end of the incision. This immediately permits of an almost complete extension of the first phalanx. Further transverse incisions are then made opposite the middle of the first and second phalanges, as the case may require. The knife is then applied to any portion of the fascia which appears to prevent complete extension of the fingers. Some portions may then appear to be so much isolated, or may project so much, that they may be cut out entirely. The other fingers of the same hand which are affected are then, in their turn, similarly treated. Complete capability of immediate extension is to be secured. The tourniquet is then removed, but although the bleeding will be very smart, it is not likely that any vessels will be seen which can be secured. I then lay a catgut or horsehair drain along the extent of the wound, and bring the edges of the latter accurately together with silver wire. A large pad of antiseptic dressing is applied, and the fingers bandaged to a straight splint. I regret to have to use a drain, but the bleeding is so free that I think it a desirable precaution. It should be removed next day, and the dressing reapplied so as to exert some pressure on the part. Should nothing untoward occur it should be left undisturbed for a week, when it is to be expected that sound union will have taken place. The stitches are removed, and subsequent treatment will consist in manipulation of the fingers and the use of the splint for two or three weeks longer.

It has been objected to this and to other "open-wound" operations that they are unnecessarily severe, and that they may be followed by serious consequences. Mr. Adams on this point remarks: \* "All operations, by open-wound, for these cases should be condemned as unnecessarily severe—involving a long and tedious reparative process, with the risk of suppurative inflammation, and also a liability to failure, in which event the condition of the patient would be worse than before

\* *Loc. cit.*, p. 38.



the operation, contraction from cicatrix being one of the most difficult conditions to relieve." I must point out, however, that the antiseptic method renders such risk extremely slight, and that the subjoined cases point to a distinctly different conclusion on every point at issue. As regards the "severity" being "unnecessary," of course that is a begging of the whole question.

CASE I.—J. K., a slater, æt. 62. Ring, little, and middle fingers of both hands affected. Degree of contraction in above order. Left rather more severe than right. On the latter, first and second phalanges of ring and little fingers, and first phalanx of middle, in a state of flexion. Transverse cutaneous creases very closely adherent to fascia. Elsewhere the skin is puckered and hard. The longitudinal bands of

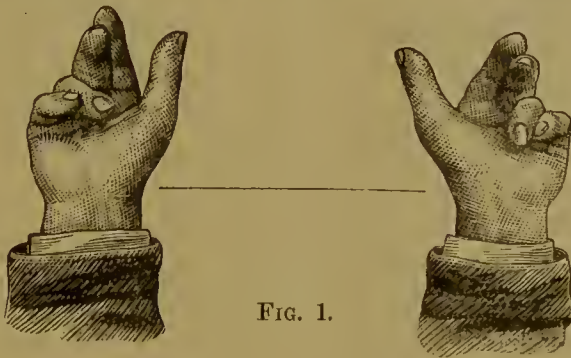


FIG. 1.

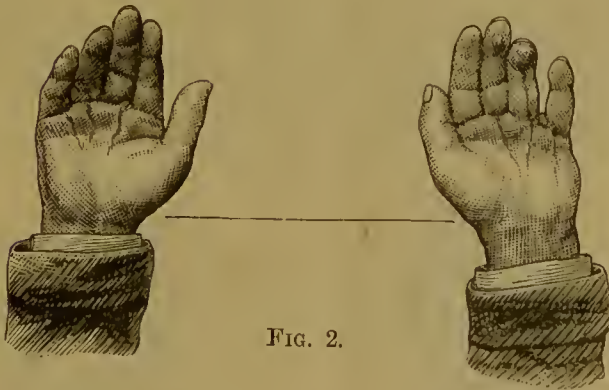


FIG. 2.

fascia proceeding to the affected fingers extremely tense. On the left side the same description applies, with the addition that here the terminal phalanges of all three fingers are also bent down, and the middle phalanx of the middle finger also. The amount of flexion of the other joints is also greater. Duration, nine years. (Fig. 1.)

*Operation.*—1884, February 16th. Left hand operated on. The incisions were carried from the middle of the palm to the base of the second phalanx in each finger. Very free separation of the skin was made, so that the incisions almost met under the portion of skin

included by them. The fascia was thus displayed as rigid bands like fiddle strings. Several cross cuts were made through each, when the fingers came down nearly straight. Interrupted silver sutures and a pad of gauze. No drain used. Dressed on the 5th day. Incisions healed, except at a few small points, where they were granulating. Passive motion and a straight splint ordered.

April 8th. Right hand operated on in the same manner as the left, except that the band of fascia of the ring finger was dissected out altogether. All the fingers came down satisfactorily. Treatment and subsequent course much the same as in the former case.

May 15th. Fig. 2 represents patient's condition. There is a general arching of all the fingers, which he cannot overcome. The distal phalanx of the left ring finger is not improved. Patient can flex his fingers satisfactorily. The scar of the incision over the right ring finger, where the fascia was removed, is more evident than the others, and appears to be producing some re-contraction.

In this case I should have done better had I continued the incisions on the left side further forward.

CASE II.—J. W., a labourer, æt. 60. Both hands involved. Began, about six years ago, in little fingers, and afterwards in the ring finger. Those on the left side had, however, been distorted by an injury some years previously. First and second phalanges flexed on both sides. The second and third joints of the little and the third of the ring finger on the left side are ankylosed, and the little finger is also directed across the palm. The skin of the palm presents the usual thickened and puckered appearance. (Fig. 3.) (The middle finger is not affected, as it might appear to be from the woodcut.)

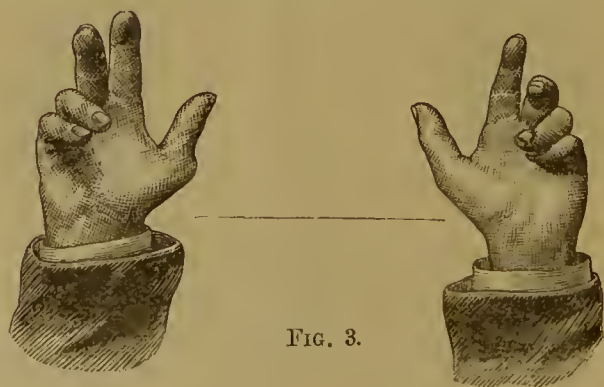


FIG. 3.

*Operation.*—1884, April 26th. Left side operated on. Fascia of ring finger removed. This finger came down perfectly, but only the first phalanx of the little finger could be extended, on account of the traumatic ankylosis. Splint worn a fortnight.

June 25th. Right side done. One incision made midway between the two longitudinal bands of fascia. These were cut across at three places. Both fingers brought down into an almost straight position. Catgut drain. Primary union.

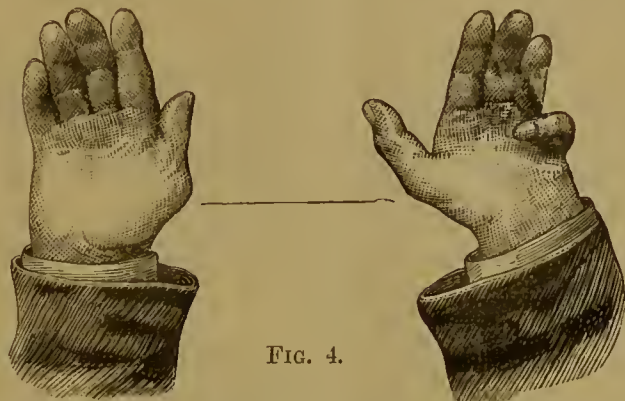


FIG. 4.

July 20th. There is considerable thickening along the line of incision on the right side. Patient moves his fingers with some effort. Photographed to-day. (Fig. 4.)

CASE III.—J. B., a porter, æt. 63. Little and ring fingers of right hand. First inter-phalangeal joints more contracted than the metacarpo-phalangeal. A case of moderate severity. Has existed for more than ten years. (Fig. 5.) The left little finger is also very severely contracted, but as the second and third joints are perfectly ankylosed from some accident and cannot be treated, I do not represent it.



FIG. 5.



FIG. 6.

*Operation.*—1884, June 25th. Two incisions, as far as the base of the second phalanges. Removal of a piece of the bridle of the ring finger. Catgut drains. Primary union. Splints were not used until July 8th, and their use was interrupted on account of some general swelling of the hand. Fig. 6 represents his condition on



July 20th. Power of flexion and extension almost complete, though sluggishly performed.

CASE IV.—W. G., a factory operative, æt. 60. About thirty years ago the little finger of the right hand was wounded, and after it had healed it began to contract. About twelve years ago the ring finger began to contract also, and both fingers have been in their present condition for nine or ten years. All the joints of the little finger are flexed. In the ring finger there is flexion of the first and second, and extension of the third. There is no ankylosis. The band of fascia connected with the ring finger is strongly marked, but that of the little finger can only be felt with difficulty. The skin of the little finger is very intimately attached, and there is an old scar visible over the middle of the first phalanx. I do not figure this case, as it is too early to judge of the result.

*Operation.*—1884, August 30th. Incision to base of second phalanx of ring finger. Fascia divided at extremities of incision. It was observed that a slip was inserted into the first phalanx on the ulnar side only. In the little finger the incision did not enter the palm, but was carried from the root of the finger to the base of the last phalanx. The dissection of the skin was troublesome, and at one place it was accidentally punctured. The fascial band, when exposed, resembled closely that of the other finger, but was thicker. It was cut across at three places, and the distal portion was removed on account of its bulging. Both fingers came down perfectly straight. Catgut drains. Straight splint. It was inspected on September 5th, when primary union was found to have taken place, except at a portion of the little finger, where granulation was going on.

The objection might be raised that sufficient time has not elapsed to enable one to estimate the ultimate result in these cases. I admit the justice of this; but, at the same time, it is difficult to imagine how re-contraction, after such an operation, can possibly take place. At the time of going to press, I have had an opportunity of inspecting cases II. and III., and am gratified to find that not only is there no re-contraction, but that the movements of the fingers are performed with much greater facility.